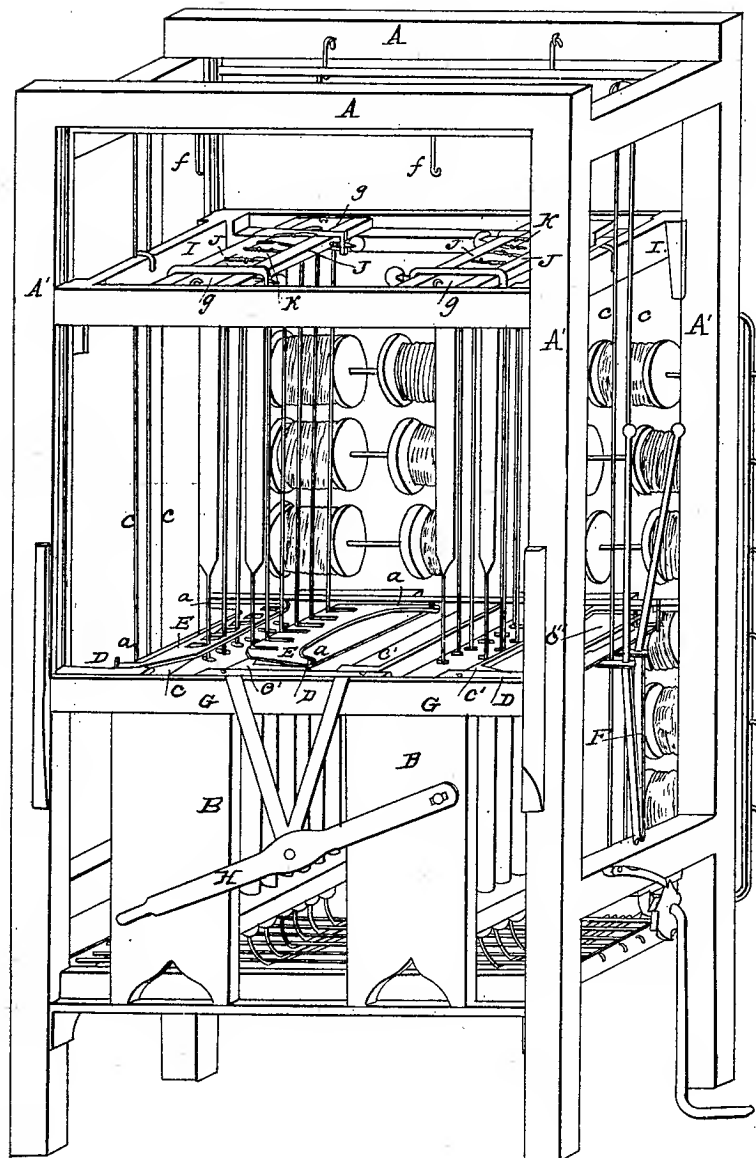


J. H. TUCK.  
Candle Mold.

No. 265.

Patented July 11, 1837.



# UNITED STATES PATENT OFFICE.

JOSEPH H. TUCK, OF NANTUCKET, MASSACHUSETTS.

## MACHINERY FOR MOLDING CANDLES.

Specification of Letters Patent No. 265, dated July 11, 1837.

*To all whom it may concern:*

Be it known that I, JOSEPH H. TUCK, of Nantucket, in the county of Nantucket and State of Massachusetts, have invented an Improved Machine for Molding or Casting Candles; and I do hereby declare that the following is a full and exact description thereof, reference being had to the drawings which accompany and make a part of this specification.

By the use of this machine it is intended to mold a number of candles upon continuous wicks, the molded candles being drawn from the molds by means of machinery to be presently described, a fresh portion of wick being at the same time drawn into the molds, upon which fresh portion other candles are to be molded, and so in succession, until seven, eight or any other convenient number are molded which number will be governed by the height of the machine after which the candles are to be separated from each other.

The drawing represents a perspective view of the machine.

The frame A A may be of wood or metal and should rise to the height of eight or nine feet above the tops of the candle molds to admit of the successive molding of the required number of candles from each wick.

B, B, are the outer ends of the stands of molds, each of which may contain the usual number of one dozen molds, the stands are fixed firmly on the lower rail of the machine, or on to the floor of the factory, as may be preferred. The stands of molds are not provided with ledges to form a reservoir for the spermaceti or other material to be poured into the molds, excepting at their back ends which may rise high enough for that purpose; but the side ledges are formed by what I denominate sliding shutters, which are shown at C, C', C'', C''', the lower side of which shutters lie and slide on the tops of the stands, their ends being confined down by the strips D, D, D, under which they play freely.

Two of these sliding shutters are represented without the wick directors E, E, above them, these being removed in order to exhibit the shutters and molds, the more distinctly. The sliding shutters taken slid in over the stands, have their inner edges exactly over the centers of the molds, and there are notches or grooves made down these edges, coinciding with the axis of each

mold, into which notches the wicks are to pass, and where they are to be held while necessary, by means of the wick-directors in a way to be presently described.

Instead of the sliding shutters above described, I have sometimes used shutters, which are hinged to the edges of the stands, and which, when turned over upon them reach exactly to the middle of the molds, but I prefer the sliding shutters, and mention the others, for the purpose merely of showing how this part may be modified, as also various others, may be, without essentially varying the principle.

F, F, are two vertical levers, which operate upon two sliding frames, the sides of which extend along each side of the machine, and whose office is to move the sliding shutter and the wick directors as may be required.

To effect this, rods or pins, rise vertically from the sliding frame, the upper ends of which rods or pins enter holes in the sliding shutters, and likewise in the wick directors, the ends of these rods or pins are seen at a, a, a. Each lever moves two of the sliding shutters and two of the wick directors. The sliding frames are supported upon proper bars as ledges under the tops of the stands.

The wick directors E, E, are usually formed of plates of metal and the openings through them b, b, b, I make in the ordinary form of a gothic window, the pointer arch serving to direct the wicks into the notches or grooves in the sliding shutters, and to hold them there during the molding process, while their wider parts are sufficiently large to admit the candles when drawn from the molds to pass through them.

The front edge of the reservoir is formed by a strip G which after the molding and when it is desired to remove the top cake may be raised or lowered by means of a lever H or in other convenient way so as to leave the reservoir open at the end.

I I is a raising frame furnished with what I call wick holders J J K. The raising frame is used to draw the candles from the molds.

The posts A', A', are grooved to receive tongues on the corners of the raising frame; or some other analogous means are adopted to allow the said frame to slide up and down correctly. This frame I usually raise and lower by means of a revolving shaft passing from end to end, under the middle

of the frame. It has a pulley at each end around which the ropes *c, c*, pass and also around the pulleys *d, d*, at the top of the frame, these ropes being attached to the raising frame, it is held perfectly under command, there being a winch by which to turn the shaft, and a ratchet wheel and pawl to hold it in its place. If preferred the shaft may cross the top of the frame, leaving the raising frame suspended below it, and it may then be turned by means of a rope passing around a pulley on its outer end.

The wick holders *J, J, K*, consists each of three pieces, the middle piece *K* being equal in width to the distance between the centers of the two rows of molds in each stand over which they range. The side strips *J, J*, may be of any convenient width, affording sufficient stiffness for the purpose intended. The wicks are to be held firmly between these outer and the middle pieces, by means of the screw clamp *e, e*, or otherwise. When the raising frame is drawn up to the full height to which it is to ascend, the staples *f f* are caught by the hooks *g, g*, and the frame may be then lowered leaving the candles suspended and another set of wickholders may be attached to the wicks to renew the operation. The candles are then to be separated from each other and removed from the machine.

I wind the wicks upon spools or bobbins, which I prefer to place on rods at the back of the frame. From these spools they pass down, and through smooth holes prepared for the purpose in a plate of metal, by which they are conducted under the machine, where they pass around wires and up into the lower ends of the molds, which they fill sufficiently close, the small holes forming the lower ends of the molds are counter-sunk to take off the sharp edges.

I sometimes especially in warm weather, cool the molds artificially by the application of cold water. To effect this, I make the molds stand between the upper and lower plank into tight cisterns, taking care that the molds shall fit water tight, into these holes in the lower plank. I am thus enabled to surround the molds with cold water; and when this has become heated and requires to be discharged a fresh portion is admitted which flows down through a tube or trunk into the lower part of the cistern, which forces a corresponding portion of the warm water to rise and flow out through an opening, made for that purpose in the upper part of the cistern at the opposite end. The sliding frame for moving the sliding shutters and the wick directors may, in this case, pass on the outside of the stands the various connecting parts being so modified as to adapt them to this arrangement.

Having thus fully described the construc-

tion of my machine for molding candles, and having indicated the manner in which the respective parts thereof are intended to operate, I will here recapitulate the successive steps in which the process is carried on by its aid.

The wicks being wound upon spools are placed upon rods crossing the back part of the machine or are otherwise conveniently situated, they are then drawn up through the molds by means of a wicking needle and their ends confined by the wick holders, resting upon the rising frame, which must be sufficiently elevated above the molds to admit of the pouring of the melted stuff into the reservoirs. In the process of wicking, the wicks before being fastened by the wick holders are of course passed through the proper openings in the wick directors. The strip *G* is made to close the ends of the reservoirs. The levers *F F* are then so moved as to bring to sliding shutters, and the wick directors, into the proper position, the former covering one half the molds and the latter confining the wicks so as to stand in the axis of the molds. The material is then poured in and suffered to set, or is cooled by the artificial process (one person may attend a number of such machines, the material in the first, setting, while the others are being filled). The bar *G* is then removed and a topping knife is slid between the sliding shutters and directly upon the top of the stands; the blade being of the proper width to fill this space. To insure the removal of the cake, the topping knife has a second blade parallel to the first, but narrower and a trifle longer the two blades being as far apart as the ordinary thickness of the cake; the end of the top blade is turned down so as to catch upon the cake in drawing it out. The sliding shutters and the wick directors, are then drawn back from the wicks, which places the openings in the latter directly over the candles, admitting the raising frame to be drawn up, and all the candles simultaneously drawn from the molds. These are elevated to such a height as is necessary to replace the sliding shutters and wick directors and to repeat and continue the process until the raising frame reaches the top of the machine.

In the above description I have supposed two stands only to be used in each machine but a greater number may be employed and operated upon by the same means.

I do not claim to be the inventor of the stands of molds nor of several other of the individual parts of the within described machine, nor do I claim the invention of simultaneously drawing of the molded candles from their molds by means of a raising frame, this having been previously done but in a manner differing essentially from that which I have adopted. But

What I do claim is—

1. The successive molding of a number of candles upon the same wick without the necessity of separating them from each other until a number have been molded, in the manner herein described.

2. I also claim the whole arrangement of what I have denominated the sliding shutters, the wick directors and their appendages, operated upon by sliding frames, substantially in the way and for the purposes set

forth, not intending by anything herein contained to limit myself to the precise means which I have pointed out, but to vary the same as I may think proper while I attain the same end by means substantially the same. 15

JOSEPH H. TUCK.

Witnesses:

THOS. P. JONES,

W. THOMPSON.